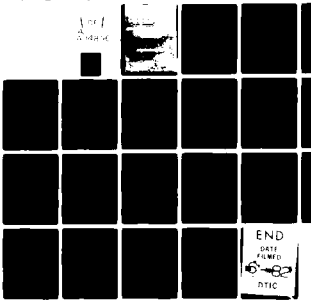
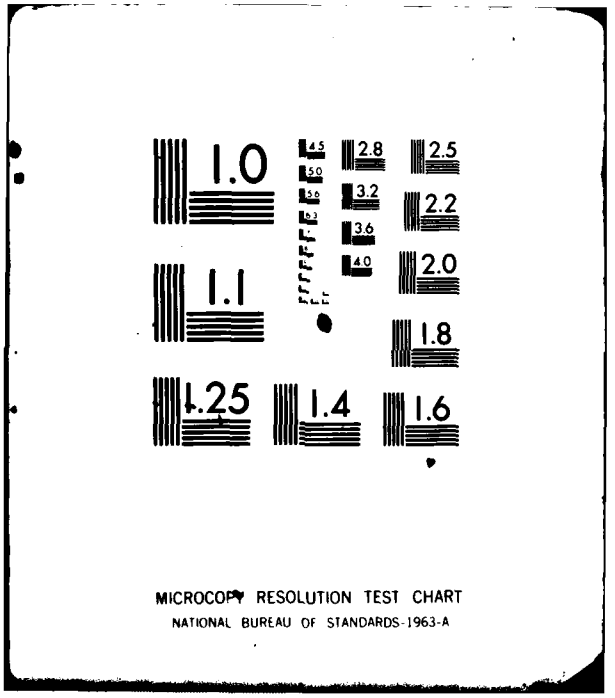
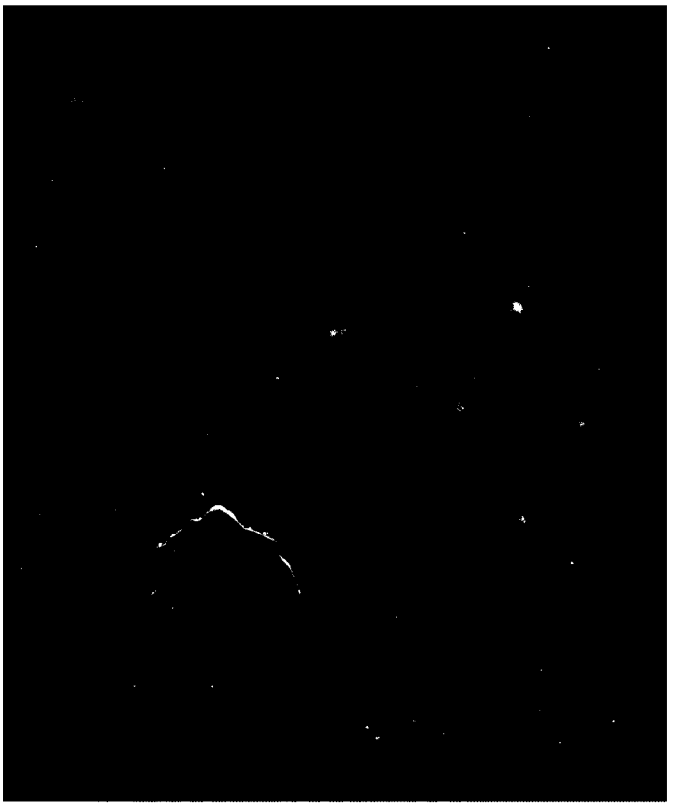
AD-A114 896 ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY ABERDEEN P--ETC F/G 13/2
DECONTAMINATION/CLEANUP OPERATIONS FOR THE LEASEBACK AREA OF AL--ETC(U)
AUG 81
UNCLASSIFIED DRXTH-FS-EA-81133 NL




1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DRXTH-FS-EA-81133	2. GOVT ACCESSION NO. AD-A114 896	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Decontamination/Cleanup Operations for the Lease-back Area of Alabama AAP, ATabama, Environmental Assessment		5. TYPE OF REPORT & PERIOD COVERED Final
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Toxic and Hazardous Materials Agency Aberdeen Proving Ground, MD 21010		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Toxic and Hazardous Materials Agency Aberdeen Proving Ground, MD 21010		12. REPORT DATE Aug 81
		13. NUMBER OF PAGES 42
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Unlimited Distribution. Cleared for Public Release.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Alabama AAP
Environmental Assessment

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This assessment documents the environmental impacts that could result from the decontamination/cleanup operations to be conducted at the Alabama Army Ammunition Plant.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

DEPARTMENT OF THE ARMY
US ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY

ENVIRONMENTAL ASSESSMENT

DECONTAMINATION/CLEANUP OPERATIONS FOR THE LEASEBACK AREA OF ALABAMA ARMY AMMUNITION PLANT, ALABAMA

AUGUST 1981

Approved by:

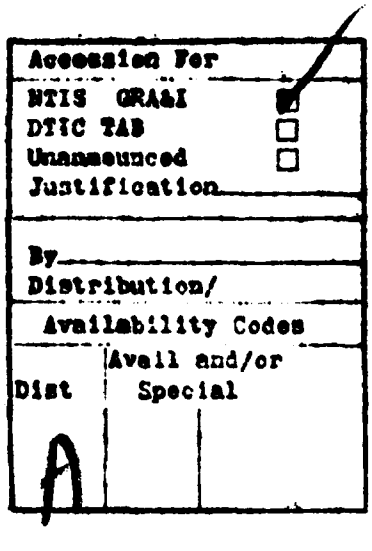
VINCENT A. LOPRESTI
Colonel, GS
Director, Plant Operations
US Army Armament Materiel
Readiness Command

JOHN D. SPENCE
Colonel, CmlC
Commanding
US Army Toxic and Hazardous
Materials Agency

D. JOE GRIFFEN
OPSEC Reviewer
Security Office

TABLE OF CONTENTS

TABLE OF CONTENTS



LIST OF FIGURES AND TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

I. PURPOSE OF AND NEED FOR THE PROPOSED ACTION

A. Purpose of the Proposed Action

1. The purpose of the proposed action is to conduct decontamination/cleanup operations at the Leaseback area of Alabama Army Ammunition Plant (AAAP) prior to Department of Army return of this property to Kimberly Clark, Inc.

2. The US Army Toxic and Hazardous Materials Agency (USATHAMA) has conducted extensive environmental surveys[1,2] at AAAP to determine the types and extent of industrial chemical and explosives contamination resulting from former operations. The proposed action is the final phase of USATHAMA's installation restoration program in the Leaseback area of AAAP. Environmental impacts of the survey phase were addressed in the Record of Determination of Environmental Quality Considerations prepared by USATHAMA.[3]

B. Need for the Proposed Action

1. AAAP was constructed in the early 1940's to produce trinitrotoluene (TNT), dinitrotoluene (DNT), trinitrophenylmethylnitramide (Tetryl), diphenylamine (DPA), rifle powder, and cannon powder. These explosives were produced at AAAP during 1942-1945; AAAP also manufactured nitric and sulfuric acids. After World War II, the Army leased the acid facilities to Tennessee Copper who in turn manufactured acids and organic compounds on AAAP during 1947-1966. Since TNT, DNT, and their byproducts/degradation products are toxic, residual contamination from their manufacturing could pose a hazard to human health and exert adverse impacts on biota.[4,5,6] Additionally, large quantities of nitrocellulose (NC)[7], explosives, or smokeless powder could constitute a fire and/or detonation hazard especially if confined. These conditions, therefore, necessitate decontamination/cleanup of these portions of the Leaseback area contaminated with NC, smokeless powder, DNT, etc., prior to Army release for industrial use by Kimberly Clark, Inc.

2. A 1,354 acre tract of AAAP was purchased by Kimberly Clark Paper Company (now Kimberly Clark, Inc.) in 1977 as a part of their corporate expansion. A total of 247 buildings containing process/manufacturing equipment previously used for nitrocellulose and smokeless powder production was located on this parcel of land. The Army leased 272 acres of this area back from Kimberly Clark, Inc., in order to remove contaminated equipment and decontaminate/cleanup buildings. Under the provisions of the lease, the Army must accomplish decontamination/equipment removal for this Leaseback area by August 1983. Contractual obligations on the part of the Army, therefore, pose a requirement to decontaminate/cleanup this Leaseback area prior to returning it to Kimberly Clark, Inc.

3. Additionally, the Leaseback area is classified as Category Two (land and/or buildings suspected of being contaminated with radiological, industrial/military chemicals, or explosives) in accordance with Title 32, Part 644 of the Code of Federal Regulations (CFR).[8] The provisions of these regulations specify that USATHAMA must assess the extent of contamination for all Category Two areas to be excessed, decontaminate these areas as appropriate, prepare a clearance statement stating the property has been cleared of toxic and hazardous materials, and provide any exceptions/restrictions for property utilization.

THIS PAGE INTENTIONALLY LEFT BLANK

II. DESCRIPTION OF THE PROPOSED ACTION

A. General. For a detailed historical description of manufacturing operations formerly conducted in the Leaseback area of AAAP, refer to the comprehensive Installation Assessment prepared previously.[1] Specific details of sampling methodology/locations used to determine the extent of contamination in the Leaseback area are contained in the Environmental Survey Report[2] and will not be reiterated in this assessment. Only a brief description of major areas of contamination which are proposed to be decontaminated and/or cleaned up as a part of this action will be presented in this assessment.

B. Location of the Proposed Action

1. As shown in Figure 1, AAAP (formerly the Alabama Ordnance Works) is located in Talladega County approximately 4 miles north of the town of Childersburg and 40 miles southeast of Birmingham. Immediately adjacent to AAAP are industrial plants owned and operated by Kimberly Clark, Inc. and American Cyanimide, Inc., respectively. Also immediately adjacent to part of the installation are the banks of the Coosa River (see Figure 1).

2. The Leaseback area where the decontamination/cleanup operations are proposed to be conducted consists of the 272 acre tract in the southwestern portion of AAAP (see Figure 2). This tract of land is part of a 1,354 acre parcel which was sold to Kimberly Clark, Inc., in 1977. Since the 272 acres proposed to be decontaminated/cleaned up under this action contained the former nitrocellulose manufacturing area, smokeless cannon powder manufacturing area, and smokeless rifle powder manufacturing area, the Government leased this area back from Kimberly Clark, Inc., to remove contaminated equipment and decontaminate these former manufacturing areas.

C. Description of the Leaseback Area

1. Nitrocellulose Production Area

a. Three independent former nitrocellulose (NC) lines are contained in the Leaseback area. Line A was designed to use wood pulp as the starter material, Line B was designed to use either wood pulp or cotton linter (short cotton fibers left after the cotton is ginned), and Line C was designed to use cotton linter only. The basic process steps consisted of drying the incoming cotton or wood pulp; nitrating the cellulose; centrifuging the crude NC to remove nitric/sulfuric acids; diluting the NC with water to halt the nitrating reaction; stabilizing the NC slurry via boiling, neutralizing via soda ash, and cutting to desired filter size; poaching the NC/remaining acid and then washing to remove residual salts; classifying the NC through a series of screens to remove any foreign material; rewashing the purified NC to remove any residual soda ash; and finally mixing the high grade and pyrotechnic grade NC to specifications and extracting the water in centrifugal wringers. A basic flow chart for the AAAP NC process is presented in Figure 3. Specific buildings used in various steps of this process contained in the Leaseback area are briefly described in the following paragraphs.

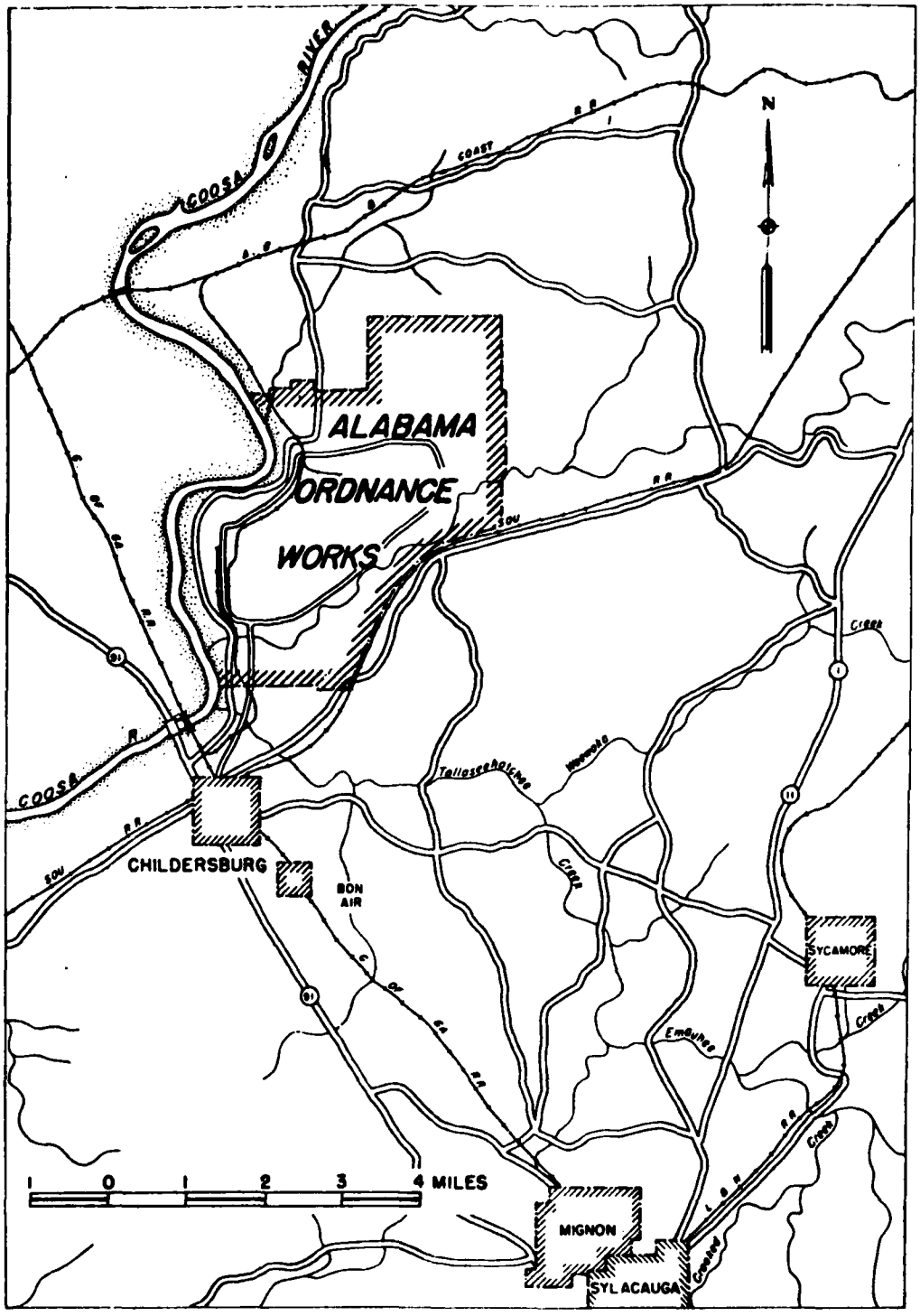
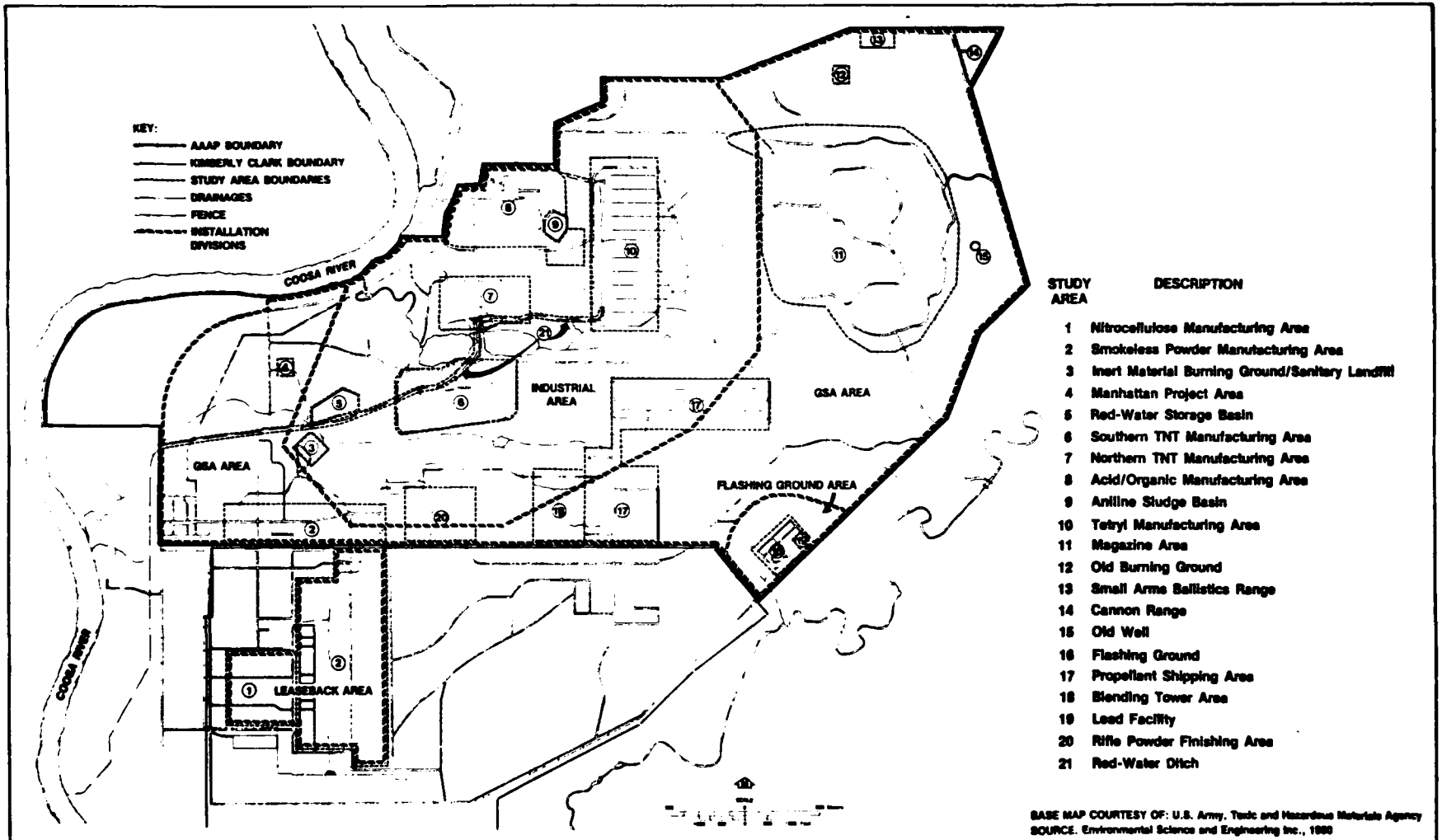


Figure 1 VICINITY MAP OF ALABAMA ORDNANCE WORKS



BASE MAP COURTESY OF: U.S. Army, Toxic and Hazardous Materials Agency
SOURCE: Environmental Science and Engineering Inc., 1988

Figure 2
AAAP LOCATION MAP SHOWING STUDY AREAS

ENVIRONMENTAL SURVEY	U.S. Army
Alabama Army Ammunition Plant	Toxic and Hazardous Materials Agency
Childersburg, Alabama	Aberdeen Proving Ground, Maryland

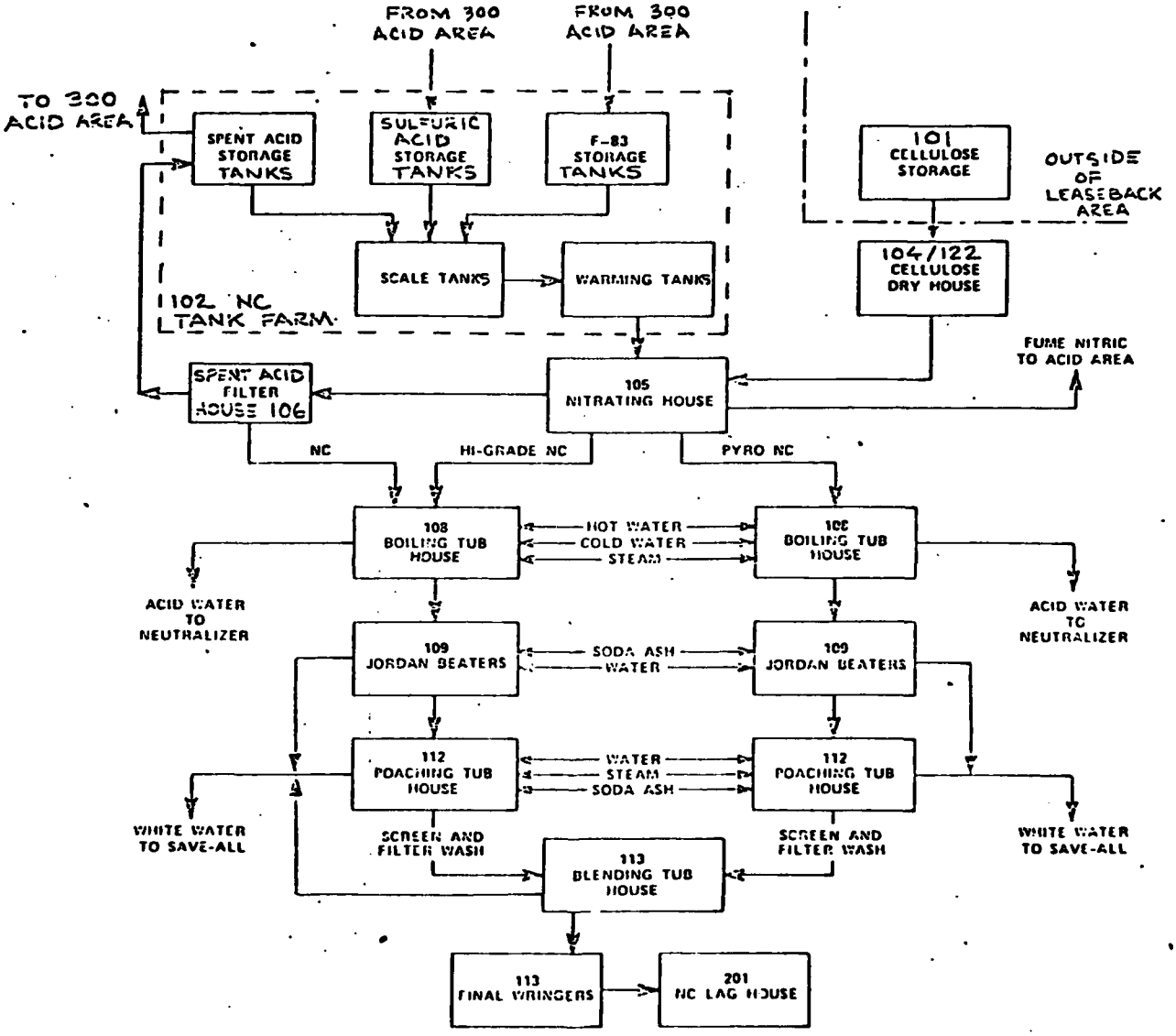


Figure 3. FLOW SHEET FOR NITROCELLULOSE AREA

b. The Dry Houses (Bldgs 104 A, B, and C) processed the incoming cotton or wood pulp in tunnel dryers on the top floor. After drying to specified levels the wood pulp was shredded and both the cotton and pulp were weighed and transported on an overhead conveyor to the third floor of the adjoining nitrating houses.

c. In the Nitrating Houses (Bldgs 105 A, B, and C), the cellulose was nitrated in agitating, dipping tanks containing a mixture of nitric and sulfuric acid. This nitrating acid was supplied by NC Tank Farm. Centrifugal wringers were used to remove the acid solution from the crude NC. The nitrating process was halted by placing the material in water drowning tanks. Both high grade and pyrotechnic grade NC slurry were then piped to the Boiling Tub Houses (see Figure 3). Spent acid was filtered in the Filter Houses prior to being returned to the NC Tank Farm.

d. The Boiling Tub Houses (Bldgs 108 A, B, and C) were used to stabilize each grade of NC slurry. It was boiled for 36 to 48 hours in these buildings prior to being piped to the Pulping Houses.

e. In the Pulping Houses (Bldgs 109 A, B, and C) soda ash was added to each grade of slurry to neutralize the acid. Both high grade and pyrotechnic grade NC fibers were cut to the proper filter size in Jordan Beaters prior to going to the Poaching Tub Houses.

f. Both grades of NC were then poached in the Poaching Tub Houses (Bldgs 112 A, B, and C). Poaching consisted of adding additional soda ash to neutralize any residual acid and boiling the solution. The NC was classified by passing it through packer screens and sand traps to remove foreign material and clumps of the NC fibers. Residual salts were removed in a vacuum filter system prior to blending the two grades of NC.

g. In the Blending & Final Wringer Houses (Bldgs 113 A, B, and C), the high grade and pyrotechnic grade NC were blended in proper proportions to meet specifications for the finished grade NC. The final process step consisted of extracting the water in a centrifugal wringer prior to loading the blended NC into rail cars.

2. Smokeless Powder Production Area

a. Seven former single base smokeless powder lines are also contained within the Leaseback area. Lines A, B, C, and D were used only for cannon powder production. Lines A, B, C, D, E, F, and G were used at various times for rifle powder production. Basic process steps consisted of dehydrating the NC with alcohol; mixing the dehydrated NC with an ether-alcohol mixed solvent and macerating with an ether containing dibutylphalate (DBP) and diphenylamine (DPA) [Dinitrotoluene (DNT) was also added in the cannon powder lines]; blocking and pressing the powder; graining and cutting the powder; recovery of the excess solvent; water drying, air drying, and glazing the powder; and finally, blending and packing of the dry powder. The basic flow chart for these smokeless powder processes as conducted at AAAP is shown in Figure 4. Specific buildings within the Leaseback area which are a part of this action are described in the following paragraphs.

b. The three Lag Houses (Bldgs 201 A, B, and C) served as storage and staging areas for the NC rail cars. At the rear of each lag house, six rail

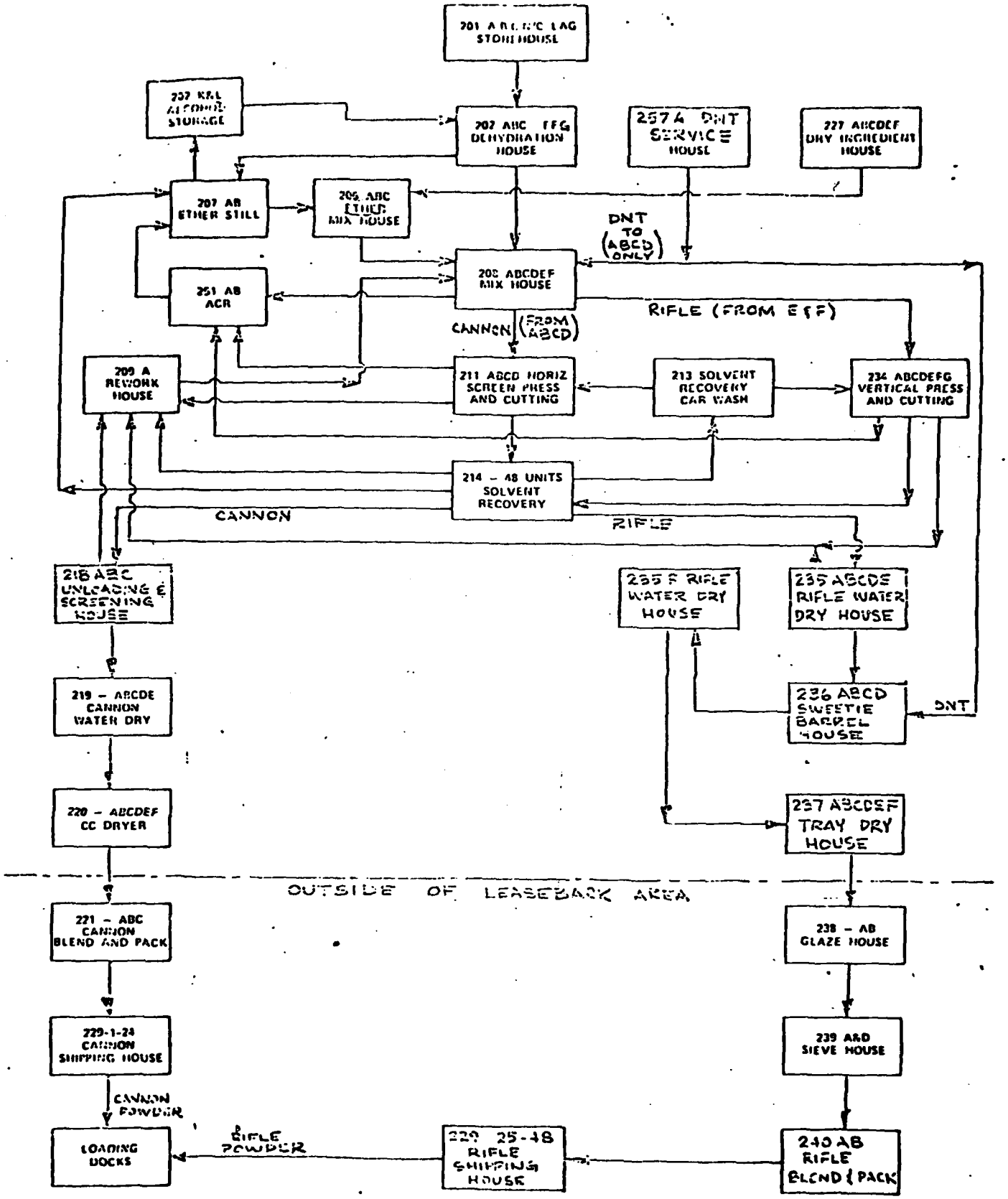


Figure 4. FLOW SHEET FOR SMOKELESS POWDER AREA

cars at a time were pushed onto long flat cars, which transported the NC rail cars to rails in line with the Dehydrating Houses.

c. Bldgs 202 A, B, C, and D were used as Dehydrating Houses for cannon powder and Bldgs 202 E, F, and G were used for rifle powder. The rail cars of NC were pushed 2 at a time into each "dehy" house and alcohol was added to the NC in a 1.25:1 ratio based upon NC dry weight. The NC was pressed into a block, and the alcohol which was squeezed out carried almost all of the water with it. The blocks were hand carried to the Mixing Houses.

d. In the Mixing Houses (Bldgs 208 A, B, C, D, E, and F) the blocks of powder were placed in macerators and mixed with the other ingredients as follows:

(1) Ether containing dibutylphthalate (DBP) and diphenylamine (DPA).

(2) Dinitrotoluene (DNT) in cannon powder only.

The mixture was pressed into blocks and placed in hand carts. Blocks for rifle powder were pushed to the 234 Vertical Press Houses, while the cannon powder blocks went to the Horizontal Press Houses. The process steps for cannon and rifle powder will be described in separate sections.

e. Smokeless Cannon Powder Process.

(1) In the Horizontal Press Houses (Bldgs 211 A, B, C, and D), the blocks of powder were placed in screening, blocking and finishing presses. In the finishing press the material was extruded into horizontal strands called "macaroni" which were cut into segments of a controlled length. These were transported by means of solvent recovery cars to the Solvent Recovery Buildings.

(2) In the Solvent Recovery Buildings [Bldg 214 (48 units)], four rail cars were processed at a time in each building. Hot air was blown through the grains for 24, 36, or 48 hours to remove any residual solvents in the grains. At completion the rail cars were moved to the Unloading and Screening Houses.

(3) Bldgs 218 A, B, and C served as the Unloading and Screening Houses where the grains were unloaded and screened to remove any out-of-specification grains and transported to the Water Drying Houses.

(4) At the Cannon Powder Water Drying Houses (Bldgs 219 A, B, C, D, and E) surplus solvent was removed by steeping the grains in 55°C air agitated water for as long as 12 days prior to moving to the Air Drying Houses.

(5) In the Air Drying (C.C.) Houses (Bldgs 220 A, B, C, D, E, and F), the water laden grains were placed in controlled circulation dryers. This process was completed when the water content reached a level of 0.60+ 0.20%. At that time the dry cannon powder went to the Blending and Packing Houses.

(6) In the Blending and Packing Houses (Bldgs 221 A, B, and C) which were outside of the Leaseback area, the dry powder grains were pneumatically conveyed to the upper bin in the blending tower and dropped over

an "umbrella" into a lower bin. This procedure was repeated twice to blend out any variances within the batch. The lower bin was transported to the packing shed and dropped into the packing hopper. Powder was metered from the bottom of the hopper into a tared weight hopper, and then transferred directly to storage containers. The containers were sealed, air tested, and taken directly to the Shipping Houses. The buildings associated with these last steps of the cannon powder process, however, are not considered under the proposed action since they are not contained within the Leaseback area (see Figure 4).

f. Smokeless Rifle Powder Process

(1) In this process, the blocks of powder mixed for rifle powder production from Mixing Houses were placed in finishing presses in the Vertical Press Houses (Bldgs 234 A, B, C, D, E, F, and G), extruded into vertical strands, and cut into exact length segments. These were transported in solvent recovery rail cars to the Solvent Recovery Building.

(2) The same processes were conducted in the Solvent Recovery Building as described for cannon powder. When finished the grains were moved by rail car to the Water Drying Houses.

(3) The Rifle Powder Water Dry Houses (Bldgs 235 A, B, C, D, E and F) were similar to the Cannon Powder Water Dry Houses (Bldg 219). The rifle grains were steeped in hot water to remove any residual solvents. The wet grains were transported to the Sweetie Barrel Houses.

(4) Each Sweetie Barrel House (Bldgs 236 A, B, C, and D) contained 4 Sweetie Barrel Tubs which were used for blending of the batch and to add DNT and DPA to the grains. Any excess DNT and DPA were removed by reprocessing in Water Dry House 235 F prior to tray drying in a separate Tray Drying House.

(5) In the Tray Drying Houses (Bldgs 237 A, B, C, D, E, and F) the wet grains were spread on trays which were placed over long troughs which forced hot air through the grains to air dry them. Once dried, the powder went to the Glazing House.

(6) Bldgs 238 A and B (outside of the Leaseback area) served as Glazing Houses where the dried powder was glazed with dry graphite. The black "glaze" coating on the surface imparted a conductive outer surface to dissipate static electricity.

(7) Upon leaving the Glazing House, the glazed rifle powder was placed on shaker sieves in the Screening House (Bldgs 239 A and B). These sieves remove any dust and grain clusters. As shown in Figure 4, this step of the process is also located outside of the Leaseback area, and associated buildings are not considered under the proposed action.

(8) The final processing steps of blending and packaging were conducted in the Rifle Powder Blending and Packing Houses (Bldgs 240 A and B). Operations were similar to those described for the Cannon Powder Blending and Packing House (Bldg 221). This final step in the rifle powder production is also not included within the Leaseback area nor under the proposed action, but included here merely for clarity.

D. Contaminated Buildings

1. Based on their previous process related history[1] and/or environmental survey results,[2] a total of 133 buildings have been determined to be contaminated with NC, NC compounds, and/or DNT within the Leaseback area. These are listed in Table 1 and are proposed to be decontaminated under the action. All building decontamination will be conducted in accordance with ARRCOM Regulation No. 385-5[10] and TB 700-4[9].

2. A total of 65 additional buildings (see Figure 2) are suspected to be uncontaminated based upon their history.[1] As a part of the proposed action, the contamination status of each of these buildings is proposed to be verified. Sampling methods will be discussed in a later section.

3. All buildings are proposed to either be burned, flashed, or proven uncontaminated by sampling. Specific approaches will be dictated by the construction and condition of the building and amount of remaining process equipment. If sampling (see Section II G) indicates only localized contamination in a building, only the affected areas are proposed to be decontaminated, using controlled flashing. Proposed open burning of contaminated buildings will be conducted only upon approval of the Director of the Alabama Air Pollution Control Commission pursuant to Chapter 3 (Control of Open Burning and Incineration) of the Alabama Air Pollution Control Rules and Regulations.[11]

a. Buildings such as water chill towers, the refrigeration and hydraulic building, and change houses probably do not require explosives decontamination, but are proposed to be sampled for NC contamination and inspected for asbestos problems. Explosives decontamination and asbestos removal/repair will be performed as necessary.

b. Contaminated process buildings of substantial incombustible construction (e.g., brick and steel beam) such as the nitrating buildings and mix houses are proposed to be decontaminated by burning. Sufficient dunnage must be added to each floor to insure all walls, ceilings, and process lines are directly exposed to the flames or a sustained temperature of at least 230°C is achieved on the interior of process piping, ductwork, and overhead areas. If there are large quantities of incombustible equipment in these buildings, it is proposed to be removed and decontaminated outside the buildings.

c. Open concrete structures such as the solvent recovery houses are proposed to have process equipment flashed. As a minimum, the remaining structure must be chemically sampled and certified clean. If sampling indicates contamination, it will be flashed or filled with dunnage and burned.

d. Frame buildings are proposed to be burned in place if economical. Dunnage may be added to insure complete combustion. Where there are sufficient wood or steel structural beams to make recovery worthwhile, these beams are proposed to be flashed before reuse. However, wooden process equipment and platforms used around process equipment are proposed to be burned. Large quantities of incombustible equipment are proposed to be removed and burned outside the building to insure thorough decontamination. The various non-combustible construction materials encountered will be handled as follows:

(1) Asbestos shingles and corrogated asbestos are proposed to be removed prior to burning buildings to ensure asbestos fibers are not released to the atmosphere during burning operations. Transite shingles, upon careful removal, are proposed to be landfilled on AAAP (outside the Leaseback area).

TABLE 1 BUILDINGS TO BE DECONTAMINATED

Bldg Nos.	QTY
104 B,C	2
105 A, B, C	3
106 A, B, C	3
109 A, B, C	3
111 A, B, C	3
112 A, B, C	3
113 A, B, C	3
120 A, B, C	3
122 A	1
202 A, B, C, E, F, G	6
206 A, B, C	3
208 A, B, C, D, E, F	6
209 A	1
211 A, B, C, D	4
213 A	1
214 A1 to A16, B1 to B16, C1 to C16	48
217 A	1
218 A, B, C	3
219 A, B, C, D, E	5
220 A, B, C, D, E, F	6
233 A	1
234 A, B, C, D, E, F, G	7
235 A, B, C, D, E, F	6
236 A, B, C, D	4
237 A, B, C, D, E, F	6
257 A	1
TOTAL	133

TABLE 2 BUILDINGS TO BE EVALUATED

Bldg Nos.	QTY
102 A, B, C	3
108 A, B, C	3
115 A, B, C	3
122 B	1
202 K, L, M	3
203 A	1
201 A, B, C	3
207 A, B	2
207 AA, BB	2
211 AB, CD	2
216 A, B	2
222 A, B	2
226 A	1
234 AB, CD, EF, GG	4
251 A, B	2
501 NA, NB	2
501 PA, PB, PC	3
610 A	1
704 A	1
704 E	1
704 K, L	2
707 C, D	2
707 E, F	2
707 L, M, N	3
707 R, S, T	3
707 V	1
722 B	1
722 C	1
722 BB	1
722 F	1
722 N, P	2
727 A, B	2
727 F, G	2
TOTAL	65

(2) Friable asbestos which has to be removed from buildings will be handled according to OSHA regulations (29 CFR 1910.1001)[13] and EPA regulations (40 CFR 61.22).[12] Pipe lagging will be inspected for contamination. Any lagging suspected of being contaminated with NC is proposed to be removed while wet and flashed in such a manner that no particulates will be released to the atmosphere. All friable asbestos will be sealed in plastic bags, transported to the designated asbestos landfill site, and disposed of in accordance with EPA and State regulations (40 CFR 61.25).[12] Since waste asbestos is no longer listed as a hazardous waste according to 40 CFR 261[14] pursuant to the the Resource Conservation and Recovery Act (RCRA),[15] neither transite nor friable asbestos insulation are proposed to be managed as hazardous wastes. Since Alabama received EPA authorization to conduct its own state hazardous waste management program in lieu of the Federal Program,[16] coordination will be conducted with the Director of the Alabama Solid Waste and Hazardous Division prior

to the proposed asbestos containing waste disposal operation since Alabama has not delisted waste asbestos as a hazardous waste.[17] Those buildings within the Leaseback area which contain friable asbestos and asbestos construction materials are listed in Tables 3 and 4, respectively.

(3) All salvageable items taken from nitrocellulose and powder areas, including tin sheets and metal panels are proposed to be flashed thoroughly on all surfaces prior to removal from Army property.

E. Contaminated Process Equipment

1. Any metal equipment, including vessels and lines, which was used in the nitrocellulose and propellant processes is proposed to be flashed prior to disposal or salvage as scrap. This will be accomplished in place or after removal from a building, however, disassembly will not be accomplished with a cutting torch or similar high temperature methods. Roll cutting or remote cutting methods (e.g. explosively) would be acceptable. Flashing methodology will insure that all exterior and interior pipe, process vessel, and equipment surfaces are decontaminated by prolonged exposure to high heat (minimum 230°C for 5 seconds) or direct application of flame. Dunnage is proposed to be used when required to achieve the necessary flame or heat intensity for thorough decontamination. Process equipment which was never used is not proposed to be decontaminated.

2. Wooden process equipment is proposed to be burned.

3. Process equipment which did not encounter nitrocellulose contamination is proposed to be treated in accordance with its former use. Water supply lines and tanks outside of operating buildings, and equipment which has been exposed to acids or solvents but not NC or propellants will be handled appropriately with care being exercised to insure there is not an explosive or toxic gas buildup within the equipment.

F. Contaminated Tanks, Sumps, Sewers, and Soil

1. Save-all tanks are proposed to be drained, cleaned, sampled, and flashed, if required. Sediments in the tanks would be sampled and, if contaminated with explosives, considered to be a reactive hazardous waste as defined by EPA (40 CFR 261.23)[14] and Alabama Hazardous Waste Management Regulations.[17] These reactive sediments are proposed to be treated via open burning in accordance with EPA (40 CFR 265.382)[18] and Alabama Hazardous Waste Management Regulations[17] either in place or by removal to a burning ground. After burning, sediment residues will be certified as nonreactive prior to ultimate disposal in an onpost sanitary landfill meeting EPA criteria (40 CFR 257)[19] and conforming to Alabama Solid Waste Management Regulations.[20] All open burning operations utilized for hazardous waste treatment will still be conducted in accordance with the provisions of the Alabama Air Pollution Control Rules and Regulations.[11]

2. Underground process lines running to and from save-all tanks are proposed to be dug up and flashed prior to disposal.

3. Sumps will be sampled for contamination. Contaminated sumps are proposed to be flashed using charcoal fires. Specific buildings within the Leaseback area which contain sumps are listed in Table 5.

4. Sewers and drains will be certified free of NC contamination by spot testing after being thoroughly exposed, both inside and out, to a sustained flame. To insure complete decontamination, the pipe is proposed to be excavated and burned along with the surrounding soil. Specific locations and lengths of sewer lines considered under this action are shown in Table 6.

5. Soil so heavily contaminated with NC, propellant, or DNT that it will actually burn will be considered an ignitable and/or reactive hazardous waste as defined by EPA (40 CFR 261.21 and 40 CFR 261.23)[14] and Alabama Hazardous Waste Regulations.[17] The ignitable and/or reactive soils are proposed to be treated via open burning in accordance with 40 CFR 265.382,[18] and applicable state hazardous waste[17] and air pollution[11] regulations as discussed previously, either in place or removed to the burning ground. After burning, residues will also be certified as nonignitable and/or nonreactive prior to disposal in an onpost sanitary landfill. Such a condition of soil contamination has been found in the Leaseback area only at the outfall of an industrial sewer line from the Tray Drying Houses (Bldg 237 series) into the crossover ditch. This isolated area of soil contamination is proposed to be excavated and decontaminated as part of this action. Sampling results[2] did not locate such a soil contamination condition in any other location probably because considerable amounts of soil were removed during the original decontamination upon AAAP closure. Low levels of DNT (i.e., 45 ppm) in the soil are proposed not be removed since these levels will pose no safety hazards and will be acceptable if the land would be used for industrial purposes upon return to Kimberly Clark, Inc. A summary of acceptable soil contamination levels for various land uses as developed by the US Army Medical Bioengineering Research and Development Laboratory (USAMBRDL)[21] is presented in Table 7.

TABLE 3 BUILDINGS CONTAINING ASBESTOS CONSTRUCTION MATERIALS

Bldg Nos.	QTY
104 C	1
105 A, B, C	3
109 A, B, C	3
112 A, B, C	3
113 A, B, C	3
122 A, B	2
202 A, B, C, E, F, G	6
208 A, B, C, D, E, F	6
209 A	1
211 AB, CD	2
214 A1 to A16, B1 to B16, C1 to C16	48
222 A, B	2
234 E, F, G	3
234 AB, DC, EF, GG	4
235 A, B, C, D, E	5
236 A, B, C, D	4
237 A, B, C, D, E, F	6
TOTAL	102

TABLE 4 BUILDINGS CONTAINING FRIABLE ASBESTOS

Bldg Nos.	QTY
102 A, B, C	3
104 B, C	2
105 A, B, C	3
112 A, B, C	3
122 A, B	2
202 A, B, C, E, F, G	6
203 A	1
206 A, B, C	3
207 A, B	2
208 A, B, C, D, E	5
209 A, B, C, D, E, F	6
211 A, B, C, D	4
213 A	1
214 A1 to A16, B1 to B16, C1 to C16	48
216 A, B	2
217 A	1
218 A, B, C	3
219 A, B, C, D	4
220 A, B, C, D, E, F	6
222 A, B	2
226 A	1
233 A	1
234 A, B, C, D, E, F, G	7
235 A, B, C, D, E, F	6
236 A, B, C, D	4
237 A, B, C, D, E, F	6
251 A, B	2
257 A	1
TOTAL	145

TABLE 5 BUILDINGS CONTAINING SUMPS

Bldg Nos.	QTY
102 A, B, C	3
105 A, B, C (Basement)	3
108 A, B, C	3
109 A, B, C	3
111 A, B, C	3
112 A, B, C	3
115 A, B, C	3
120 A, B, C	3
122 B (Basement)	1
202 A, B, C, E, F, G	6
207 A, B	2
207 AA, BB	2
208 A, B, C, D, E, F	6
211 A, B, C, D	4
213 A	1
216 A, B	2
218 A (Basement)	1
219 A, B, C, D, E	5
220 A, B, C, D, E, F	6
222 A, B	2
233 A	1
234 A, B, C, D, E, F, G	7
235 A, B, C, D, E, F	6
236 A, B, C, D	4
237 A, B, C, D, E, F	6
TOTAL	81

TABLE 6 LEASEBACK SEWER LINES

Sewer Line Identification	Approx Length of line in feet
NC Line A	3,800
NC Line B	3,800
NC Line C	3,800
Interceptor for NC Lines	1,200
237 Series Bldgs	3,100
235 & 236 Series Bldgs	4,100
220 Series Bldgs	3,100
219 Series Bldgs	1,600
213 & 214 Series Bldgs & Trunk Line	9,500
202, 207, 208, 211, 234, 251 Series Bldgs	9,500
207 AA, BB & 203 Bldgs	2,500
TOTAL	46,000

TABLE 7 PRELIMINARY POLLUTANT LIMIT VALUES (PPLV) FOR VARIOUS LAND USES

Name of Contaminant	PPLVs (mg/kg of soil) Subsistence Farming	Residential Housing	Apartment Dwellings	Industrial Use (Calc'd)*
2,4,6-Trinitrotoluene	2.4	2.2	13	2,660
Dinitrotoluenes+	0.042	0.037	0.21	45
Tetryl	1.1	1.1	6.2	37,500
Nitrobenzene	4.0	3.7	21.1	127,500
1,3-Dinitrobenzene	0.84	0.72	4.1	25,000
1,3,5-Trinitrobenzene	0.67	0.65	3.7	781
Aniline	8.7	7.2	4.1	250,000
N,N-Dimethylaniline	22	18	103	625,000
Diphenylamine	35	35	200	250,000
Lead	200	150	150	3,750
Nitrocellulose*	1000	1000	1000	---

*USAMBRDL would set all PPLVs at no higher than 1000 mg/kg.
+PPLV developed based on a risk level of 10^{-5} (1 excess cancer death in 100,000 population).

G. Sampling and Inspection

1. All existing buildings, former building foundations, and their immediate surroundings are proposed to be visually inspected for asbestos, propellants, and other contamination to define all areas requiring decontamination. Equipment utilized for these processes in the Leaseback area will be decontaminated for explosives, propellants, and toxic organic materials by placing it in a building to be burned. All asbestos materials will be placed in an approved asbestos disposal site.

2. Nitrocellulose:

a. Prior to decontamination all buildings are proposed to be sampled for nitrocellulose contamination using spot sprays. Sampling will be done in places where NC or propellants are likely to accumulate, such as overhead surfaces, between walls, in cracks, or around drains. Negative results would be accepted as proof the structure is uncontaminated. Positive results would be confirmed by a more selective colorimetric or thin layer chromatographic (TLC) methods. Sewers will be excavated and flashed, certified decontaminated, and buried.

b. After decontamination, salvageable materials and buildings which were subjected to controlled flashing will be randomly sampled by TLC or colorimetric methods to insure complete decontamination has been accomplished. Buildings which have been burned to the ground are proposed not to be sampled, but will be visually inspected prior to landfilling of the rubble to insure completeness of the burn.

3. Analysis for DNT is proposed to be accomplished by spot spray or gas chromatography. Since DNT occurs only in a few buildings which will be burned, the need for follow-up sampling will be limited to random sampling of scrap. Soil sampling is not anticipated due to the low level encountered in the original survey.[2]

4. Visual inspection is proposed to be used to insure the Leaseback area is clear of all loose asbestos debris. Any additional asbestos debris observed will be separated into friable and hard-fired forms and placed in the asbestos disposal facility or landfilled, respectively.

H. Contaminant Hazard Potential

1. As discussed previously, the primary contaminant is nitrocellulose, either as pure NC or in propellant grains. It is normally a fire hazard, but dry NC is very sensitive, and when confined, is capable of causing explosions. Powders or fibers may accumulate on surfaces or in cracks. Studies have shown nitrocellulose exhibits no mammalian toxicity.[7] Nitrocellulose will decompose completely when exposed to 230°C for five seconds with partial decomposition occurring at lower temperatures.[22]

2. Dinitrotoluene (DNT) is a secondary contaminant used only in the single base propellant area at AAAP, where it was employed as a gelatinizing and moisture proofing agent. DNT will burn and can detonate if burned under confinement. The levels encountered in the soil at Alabama AAP (approximately 1 ppm) do not pose an acute (i.e., fire or explosion) hazard. Although no approved soil standard exists for DNT, USAMBRDL has calculated 45 ppm as an acceptable level in soil (based on a 10^{-5} risk level) to be used for industrial purposes such as this land, which adjoins Kimberly Clark's paper plant.[21] Studies by EPA have resulted in water quality criteria being established for DNT with respect to freshwater aquatic life, saltwater aquatic life, and human health (due to potential carcinogenic effects).[4] With regard to freshwater aquatic life, acute and chronic toxicity occurs at DNT concentrations of 330 ppb and 230 ppb, respectively.[4] Acute and chronic toxicity to saltwater life occurs at 590 ppb and 370 ppb, respectively.[4] The criteria EPA established for the protection of human health from the potential carcinogenic effects of ingesting DNT contaminated water and aquatic organisms is based on the incremental increase of cancer risk over a lifetime. For risk levels of 10^{-5} (i.e., 1 case cancer/100,000 population), 10^{-6}, and 10^{-7}, these criteria correspond 1.1 ppb, 0.11 ppb, and 0.011 ppb, respectively.[4]

3. Secondary contamination may exist from acids and solvents and their decomposition products in process equipment. Hazards from acids, alkalis, and explosive gases must be considered. In equipment where ether

has been used, it is possible explosive peroxides may have formed. However, the equipment at Alabama was decontaminated to the XXX* level in 1945 and most useable equipment is being broken down and moved to other installations, so any residual hazard would be minimal.

4. Asbestos is found throughout the Leaseback area in construction materials (shingles and sheets) and in pipe lagging. Hazards associated with the inhalation of friable asbestos (such as pipe lagging) have been well documented in the scientific literature and by the American Conference of Governmental Industrial Hygienists (ACGIH),[23] National Institute for Occupational Safety and Health (NIOSH),[24] Occupational Safety and Health Administration (OSHA),[13] and the Environmental Protection Agency (EPA).[12] Stringent OSHA and EPA regulations govern stripping asbestos insulation from pipes, vessels, etc. and disposal of this material (i.e., 29 CFR 1910 and 40 CFR 61).[12,13] EPA has also developed a human health water quality criteria based on potential carcinogenic effects of asbestos. At risk levels of 10^{-5}, 10^{-6}, and 10^{-7}, these criteria correspond 300,000 fibers per liter, 30,000 fibers per liter, and 3,000 fibers per liter, respectively.[25]

*XXX indicates that an item has been examined and cleaned by approved procedures and no contamination can be detected by appropriate instrumentation, test solutions, or by visual inspection on easily accessible surfaces in concealed housings, etc., and is considered safe for intended use only.[9,10]

I. Safety

1. All decontamination/cleanup operations proposed for the Leaseback area as a part of this action would be conducted in strict accordance with applicable Department of Army (DA) safety regulations as discussed in ARRCOM Regulation No. 385-5.[10] Many of these provisions such as not using flame cutting devices (i.e., blow torches, etc.) due to the possibility of explosive material remaining in confined spaces have been discussed previously in this document. Personnel protective equipment (i.e., hearing protection, eye protection, foot protection, head protection, gloves, etc.) will be utilized as required to insure worker protection. All equipment utilized will meet the specifications of 29 CFR 1910, Subpart I.[27]

2. All open burning of contaminated buildings proposed under the action will only be conducted under favorable meteorological conditions and with a fire truck standing by to ensure the burning is contained to the specified area.

3. The removal of friable asbestos insulation from pipes, vessels, and equipment proposed to be conducted under the action will be in accordance with OSHA and EPA requirements (29 CFR 1910.1000[12] and 40 CFR 61.22[13]). Specifically, the friable asbestos containing materials will be wetted down prior to removal, workers will be supplied with respirators and protective clothing, the work areas will be posted, waste asbestos will be placed in impermeable bags and labeled, and medical surveillance will be performed on workers involved with asbestos removal. To insure maximum protection to individuals involved with the asbestos disposal facility, all disposal operations would be in accordance with 40 CFR 61.25.[12] Specifically, the landfill site will be posted, and all wastes deposited will be covered each day with at least 6 inches of compacted, non-asbestos containing material.

4. Although no extensive demolition activities are anticipated under the proposed action, any use of explosives will be conducted in accordance with established Department of Army explosives handling procedures and the appropriate OSHA requirements (29 CFR 1910.109).[26]

5. All open burning (hazardous waste treatment) of the sediments and soils contaminated with waste explosives will be conducted at distances from the installation boundary as specified in 40 CFR 265.382[18] to insure the resulting smoke does not pose a traffic hazard or constitute a nuisance to the surrounding community. Any explosive contaminated sediments/soils which could not be open burned in compliance with these minimum distances will be hauled offpost by an authorized hazardous waste transporter as specified by 40 CFR 263[28] and the Alabama hazardous waste management regulaltions[17] to an approved hazardous waste treatment, storage, or disposal facility meeting the requirements of 40 CFR 264[29] or the interim status requirements of 40 CFR 265[18] as implemented via Alabama's hazardous waste management program.[17] For small quantities of such wastes which could be open burned in accordance with the previously discussed guidelines and would be exempted under 40 CFR 261.5[14] (and the corresponding Alabama small generator exclusion), they would be hauled offpost by a transporter complying with all Department of Transportation (DOT) requirements (ie., 49 CFR 171-177).[30]

THIS PAGE INTENTIONALLY LEFT BLANK

III. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

A. Air Quality

1. Open burning of contaminated buildings proposed to be conducted under the action will have the greatest air quality impacts. AAAP is situated in the East Alabama Intrastate Air Quality Control Region (AQCR). That portion of the AQCR which includes AAAP has been designated "better than the National Ambient Air Quality Standards (NAAQS)"[31] for suspended particulate matter, and "cannot be classified or better than NAAQS" for ozone, carbon monoxide, and nitrogen dioxide by EPA.[32] Atmospheric emissions resulting from open burning of municipal refuse (based on EPA emission factors) typically average 16 lb particulates/ton refuse, 1 lb sulfur oxides/ton refuse, 85 lb carbon monoxide/ton refuse, 30 lb organics/ton refuse, and 6 lb nitrogen oxides/ton refuse.[33] Based on this magnitude of emissions, this one-time open burning of contaminated buildings proposed under the action is not expected to degrade air quality to a level where ambient air quality standards would be exceeded. Additionally, such open burning will only be conducted upon approval of the Director of the Alabama Air Pollution Control Commission as discussed previously. Open burning will only be conducted during favorable meteorological conditions (i.e., wind speeds and atmospheric stability capable of assuring effective dispersion) as determined by the State of Alabama.

2. The limited amounts of open burning of explosive contaminated sediments/soils proposed under the action will also impact upon air quality. This type of open burning is currently permissible under Alabama air pollution regulations[11] and is routinely practiced at other Federal installations within Alabama.[34] Limited data are available in the literature to quantify the open burning of explosive and explosive contaminated materials. Literature values for detonations of explosives similar to those present at AAAP are shown in Table 8.[35] Based on available information the minor quantities proposed to be burned are not felt to have significant air quality impacts.

3. The potential hazardous (asbestos) air pollution impacts due to proposed asbestos removal from pipes, vessels, etc., and disposal of these asbestos materials must also be considered. These operations would be conducted in strict accordance with 40 CFR 61[12] to minimize any potential of friable asbestos fibers becoming airborne. Although transite is not a form of friable asbestos, open burning of buildings with transite shingles could conceivably transform these shingles into a friable form capable of being released to the atmosphere. Therefore, all transite shingles will be removed prior to burning of these buildings. Based on the aforementioned considerations, the proposed action will not cause significant amounts of friable asbestos to be released to the atmosphere.

TABLE 8 AIR EMISSIONS FROM DETONATION OF EXPLOSIVES (lb/Ton)

	CO	CH_4	H_2S	Particulate (C)
Black Blasting Powder	170	4	24	--
Nitrocellulose	640	3	--	36
Gunpowder	77	1	21	--

B. Water Quality

1. A major portion of the surface drainage from the Leaseback area and other areas within AAAP which are not considered under the proposed action [specifically the Blending Tower Area, Propellant Shipping Area, Inert Burning Ground, and Sanitary Landfill (see Figure 2)] is collected in the Crossover Ditch Drainage System. This drainage network collects about 25 percent of all generated AAAP surface waters and discharges them to the Coosa River. The remainder of the Leaseback area is drained by a small ditch which discharges into Talladega Creek. This drainage system accounts for approximately 5 percent of the surface runoff from AAAP. None of the decontamination/cleanup operations proposed under the action are expected to cause any quantifiable degradation of surface water quality in either the Coosa River or Talledaga Creek. For a detailed discussion of the existing water quality of these surface drainage systems, refer to the environmental survey report.[2]

2. The major source of surface drainage associated with the proposed action would be fire fighting efforts in the event of unexpected spread of fire from open burning of contaminated buildings. This possibility is considered to be quite remote. Even if such an event should occur, the combined fire protection resources of AAAP and Kimberly Clark, Inc. are considered to be more than sufficient to extinquish such a blaze.

3. Considerable groundwater characterization was also conducted during the environmental survey of AAAP.[2] Samples from wells installed in the Leaseback area showed no detectable levels of any nitroaromatic compounds although trace amounts of phthalates, low concentrations of heavy metals, and low nitrate levels were detected. None of the proposed decontamination/cleanup operations are expected to have any adverse groundwater impacts. Those decontaminated materials proposed to be disposed of in the onpost sanitary landfill (outside of the Leaseback area) are not expected to cause any quantifiable degradation of the water table aquifer. These landfilling operations will be conducted in accordance with the groundwater protection criteria of 40 CFR 257[19] to further minimize any potential groundwater impacts.

C. Hazardous and Solid Waste

1. The only type of hazardous waste treatment in the Leaseback area proposed as part of the action is open burning of waste explosives and explosive contaminated wastes. As discussed previously, such operations are proposed to be conducted in accordance with 40 CFR 265.382[18] and applicable Alabama hazardous waste[17] and air pollution[11] requirements. This type of controlled open burning is felt to minimize the possibility of the discharge of hazardous waste or hazardous waste constituents into the environment. If for some reason these waste explosives/explosive contaminated wastes cannot be treated onsite in accordance with the aforementioned restrictions, those wastes will be managed as hazardous wastes and transported offpost by hazardous waste transporters complying with all State, EPA, and DOT requirements to an approved hazardous waste treatment, storage, or disposal facility. No onpost hazardous waste storage will be allowed as part of the action. For these reasons, no direct environmental impacts due to improper management of hazardous wastes are envisioned to result from the proposed action.

2. Residues from the open burning of waste explosives/explosive contaminated wastes (including soils and sediments) will be certified as nonreactive and/or nonignitable and disposed of as nonhazardous wastes buried at the site, or in the sanitary landfill. The landfill will be operated in accordance with EPA criteria (40 CFR 257)[19] and Alabama solid waste disposal regulations[20] to maximize protection of the environment. No hazardous waste or friable asbestos-containing waste (i.e., pipe lagging and insulation) will be disposed of in this landfill as part of this action. When possible, the remains of burned contaminated buildings and equipment will be landfilled in place. This disposal would also be in accordance with Alabama requirements.[17] Therefore, no environmental impacts from landfilling operations proposed under the action appear likely.

3. All friable asbestos-containing wastes, such as insulation, will be disposed of exclusively in the designated asbestos disposal facility. Since this landfill operation will be in strict accordance with 40 CFR 61[12] and corresponding Alabama air pollution (fugitive dust) requirements,[11] no asbestos related environmental impacts are considered realistic. Also, as discussed previously, the Alabama Division of Solid Waste will be coordinated with prior to any asbestos-containing waste disposal since Alabama has not yet incorporated EPA's example and delisted waste asbestos as a hazardous waste. However, these listed hazardous wastes only apply to pure chemicals which are being disposed of (such as pure asbestos), not wastes which merely contain some percent of the chemical.

D. Noise Impacts

1. Demolition of contaminated buildings within the Leaseback area is the only activity of the proposed action which has the potential to significantly revise ambient noise levels. This demolition will typically be accomplished using bulldozers, wrecking ball, dump trucks, and related heavy construction equipment rather than explosives (although explosives may be required in certain cases). The operation of such equipment typically produces noise levels in the range of 76 to 88 decibels (dB) when measured on the A-weighted scale of a sound level meter (expressed as dBA). The Department of Housing and Urban Development indicates that construction site noise is normally acceptable if levels do not exceed 65 dBA (measured at the boundary) for 8 hours in a 24 hour period.[36] It is not considered feasible that the limited demolition work proposed to be conducted in the Leaseback area of AAAP would produce continuous noise levels exceeding this guideline.

2. Additionally, AAAP's industrial neighbors, Kimberly Clark, Inc., and American Cyanimide, are sources of considerable noise and would tend to mask the propagation of noise into the environment from proposed demolition activities in the Leaseback area. Since demolition operations will only be conducted between the hours of 6 A.M. and 6 P.M., highway traffic noises would also tend to mask demolition activities on AAAP. Due to these mitigating factors, it is not anticipated that the proposed action will result in any discernible increase in ambient noise levels in the area surrounding the installation.

E. Impacts on Flora and Fauna

1. Principal species of flora found in the Leaseback area include: Bermuda grass, Dallis grass, Johnson grass, kudzu, honeysuckle, lespedeza, and various broomhedge and briars. For a detailed listing refer to the installation assessment of AAAP.[1] To date, no listed endangered or threatened species of plant has been identified within the confines of AAAP. Various open burning/clearing activities proposed under the action will impact on the existing environmental conditions of numerous common forms of vegetation. Most of these impacts will probably be short-term since much of the cleared vegetation will replenish itself unless continuously controlled by Kimberly Clark, Inc., once they take possession of the Leaseback area.

2. A large variety of fauna potentially inhabit Talladega and Calhoun Counties including 27 amphibian species, 46 reptilian species, 48 mammalian species, and 192 species of birds.[1] For a detailed listing, refer to the AAAP installation assessment.[1] Included among these are several threatened or endangered species including the red-cockaded woodpecker.[37] To date, no listed endangered or threatened species has been spotted within the confines of the installation. Since the proposed demolition/open burning operations will dislodge various birds and insects which have established habitats in abandoned buildings, it is probable that a limited number of these creatures will expire as a result of the proposed action. Those personnel involved in demolition/open burning activities will be advised of the potential for encountering the red-cockaded woodpecker and will be instructed to take precautions to ensure this protected species of bird is not harmed.

F. Historical Impacts

1. None of the buildings proposed to be open burned/demolished under the action are listed on the National Register of Historic Places[38,39,40] pursuant to the National Historic Preservation Act.[41] Additionally, none of the affected properties within the Leaseback area of AAAP are listed as historic by any State or local historical society.

2. Throughout the history of AAAP, there have been no buildings or artifacts of any historical or cultural significance, nor is the property upon which AAAP (including the Leaseback area) is located considered to be of historical or archaeological significance. Therefore, no conflict with either archaeological or historic resources is expected as a result of the proposed action.

G. Socioeconomic Considerations

1. Proposed decontamination/cleanup operations will result in a short-term stimulation of the local economy since a considerable portion of the work force will most likely be drawn from the local population. There will also be a short-term stimulation of area firms which rent/lease construction equipment of the type proposed to be used with demolition operations.

2. Longer term stimulation of the local economy may result once the decontaminated Leaseback area is returned to Kimberly Clark, Inc. However, these considerations will not be further addressed in this assessment since they do not pertain directly to the proposed action.

IV. ALTERNATIVES TO THE PROPOSED ACTION

Two possible alternatives for consideration to the proposed action are the following:

A. No Action

This no action alternative would eliminate the proposed decontamination/cleanup of the Leaseback area prior to returning the property to Kimberly Clark, Inc., by August 1982. This alternative would result in the Army defaulting on contractual obligations and potentially result in the Army becoming involved in extensive litigation with Kimberly Clark, Inc. Additionally, the present hazards (see Section II. H) associated with nitrocellulose/explosives contamination on buildings and in the soils would still be present in the environment. Although groundwater is not presently contaminated with explosives (nitroaromatics) related compounds, their continued presence in the soil could eventually allow detectable concentrations to percolate through the soil into the uppermost aquifer. Other than this potential water quality impact, no environmental impacts would result from this alternative.

B. Retain the Property Indefinitely

This retention alternative would also involve no decontaminating/cleaning up of the Leaseback area, but the property would be retained indefinitely rather than returned to Kimberly Clark, Inc. Since Kimberly Clark, Inc., presently owns the Leaseback area, the Army would have to negotiate the purchase of this property from Kimberly Clark, Inc. This would mean the Army would be buying back property it had previously declared excess of its needs. In addition to defaulting on contractual obligations as discussed previously, the contamination and associated hazards would still be present in the environment. Resulting environmental impacts would be similar to those encountered with the "No Action" alternative. This alternative would also involve long-term monitoring to insure the contamination would not spread and recurring security costs to insure the public would not have access to these contaminated properties. Furthermore, any stimulation of the local economy associated with Kimberly Clark, Inc., taking control of the Leaseback area would not occur.

THIS PAGE INTENTIONALLY LEFT BLANK

V. CONCLUSION OF WHETHER TO PREPARE AN EIS

As discussed in Section III, the decontamination/cleanup of the Leaseback area proposed under the action, if implemented, would not result in any significant environmental impacts. All open burning operations proposed under the action would be conducted in strict accordance with applicable Alabama air pollution regulations.[11] Proposed open burning of hazardous waste (waste explosives and explosive contaminated wastes) will only be conducted in conformance to EPA[18] and Alabama[17] hazard waste management requirements. Removal, transportation, and disposal of friable asbestos insulation will be conducted in compliance with OSHA,[26] EPA[12] and Alabama[11] requirements. Although the possibility of encountering the red-cockaded woodpecker during decontamination/cleanup operations is considered remote (see Section III. E), personnel will be advised of the possibility and instructed not to harm this protected species of bird. Due to the aforementioned mitigating factors, it is concluded that this Environmental Assessment adequately addresses the environmental issues associated with the proposed action. In accordance with the Council of Environmental Quality (CEQ)[42] and Department of Army (DA)[43] regulations implementing the National Environmental Policy Act (NEPA),[44] a Finding of No Significant Impact (FNSI) will be prepared for this action.

THIS PAGE INTENTIONALLY LEFT BLANK

VI. LIST OF PREPARERS

The following individuals from the US Army Toxic and Hazardous Materials Agency prepared this document:

1. James D. Wood, CPT, MSC, Sanitary Engineer
2. Salvatore P. Torrisi, Chemical Engineer, AAAP Systems Manager
3. David R. Wright, Mechanical Engineer, AAAP Project Engineer
4. William A. White, Safety Engineer
5. Cyrus J. Staniec, CPT, OrdC, Explosive Ordnance Disposal Officer

THIS PAGE INTENTIONALLY LEFT BLANK

REFERENCES

1. Report No. 130, US Army Toxic and Hazardous Materials Agency (USATHAMA) May 1978, Installation Assessment of Alabama Army Ammunition Plant.

2. Final Report, USATHAMA, October 1980, Environmental Survey of Alabama Army Ammunition Plant, Contract DAAK 11-79-C-0131, Environmental Science and Engineering, Inc.

3. O'Keefe, H.J. and Nemeth, G., USATHAMA, October 1979, Record of Determination of Environmental Quality Considerations of Preliminary Survey for Alabama Army Ammunition Plant.

4. Report No. EPA 440/5-80-045, US Environmental Protection Agency, (USEPA), October 1980, Ambient Water Quality Criteria for Dinitrotoluene.

5. Report No. EPA 440/5-80-061, USEPA, October 1980, Ambient Water Quality Criteria for Nitrobenzene.

6. Report No. EPA 440/5-80-064, USEPA, October 1980, Ambient Water Quality Criteria for Nitrosamines.

7. Sullivan, J.H., Putnam, H.D., Keirn, M.A., Pruitt, B.C., and Nichols, J.C., US Army Medical Research and Development Command (USAMRDC), October 1978, A Summary and Evaluation of Aquatic Environmental Data in Relation to Establishing Water Quality Criteria for Munitions Unique Compounds: Nitrocellulose.

8. Title 32, Code of Federal Regulations (CFR), 1980 ed., Part 644, US Army Corps of Engineers Real Estate Handbook as amended by 45 Federal Register (FR) 71266, 27 October 1980.

9. TB 700-4, Department of the Army, October 1978, Decontamination of Facilities and Equipment.

10. ARRCOM Regulation No. 385-5, Department of the Army, US Army Armament Material Readiness Command, October 1979, Safety: Contamination, Decontamination, and Disposal.

11. Alabama Air Pollution Control Commission Rules and Regulations, Alabama Air Pollution Control Commission, as amended August 1979.

12. Title 40, CFR, 1980 ed., Part 61, National Emission Standards for Hazardous Air Pollutants, Subpart B - National Emission Standards for Asbestos.

13. Title 29 CFR, 1980 ed., Part 1910, Occupational Safety and Health Standards, Section 1910.1001 - Asbestos.

14. Title 40, CFR, 1980 ed., Part 261, Identification and Listing of Hazardous Waste as amended by 45 FR 78532, 25 November 1980.

15. Resource Conservation and Recovery Act, Public Law 94-580, 20 October 1976.

16. Notice of Final Determination, Alabama's Application for Phase I Interim Authorization of a State Hazardous Waste Management Program, 46 FR 14008, 25 February 1981.

17. Alabama Rules and Regulations for Hazardous Waste Management, Alabama Department of Public Health, Environmental Health Administration, Division of Solid Waste, as adopted September 1980.

18. Title 40, CFR, 1980 ed., Part 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.

19. Title 40, CFR, 1980 ed., Part 257, Criteria for Classification of Solid Waste Disposal Facilities and Practices.

20. Alabama Solid Waste Management Regulations, Alabama Department of Public Health, Environmental Health Administration, Division of Solid Waste and Vector Control, as adopted July 1972.

21. Technical Report 8105, US Army Medical Bioengineering Research and Development Laboratory (USAMBRDL), August 1981, Estimation of Acceptable Levels of Soil Contaminants at Alabama Army Ammunition Plant.

22. TM 9-1300-214, Department of the Army, November 1967, Military Explosives.

23. American Conference of Governmental Industrial Hygienists, (ACGIH), 1979, Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment with Intended Changes for 1980.

24. National Institute for Occupational Safety and Health (NIOSH), 1972, Criteria for a Recommended Standard: Occupational Exposure to Asbestos.

25. Report No. EPA 440/5-80-022, USEPA, October 1980, Water Quality Criteria for Asbestos.

26. Title 29 CFR, 1980 ed., Part 1910, Occupational Safety and Health Standards, Section 1910.109, Explosives and Blasting Agents.

27. Title 29 CFR, 1980 ed., Part 1910, Occupational Safety and Health Standards, Subpart I - Personal Protective Equipment.

28. Title 40 CFR, 1980 ed., Part 263, Standards Applicable to Transporters of Hazardous Waste.

29. Title 40 CFR, 1980 ed., Part 264, Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.

30. Title 40 CFR, 1980 ed., Parts 171-177, Identification Numbers, Hazardous Wastes, Hazardous Substances, International Descriptions, Improved Descriptions, Forbidden Materials, and Organic Peroxides.

31. Title 40 CFR, 1980 ed., Part 50, National Primary and Secondary Ambient Air Quality Standards.

32. Title 40 CFR, 1980 ed., Part 81, Air Quality Control Programs, Criteria, and Control Techniques, Section 81.301 - Section 107 Attainment Status Designations: Alabama.

33. Report No. AP-42, USEPA, July 1979, Compilation of Air Pollutant Emission Factors, 3rd Ed., with supplements 1-9.

34. Report, HSE-EA-A/WP, US Army Environmental Hygiene Agency (USAEHA), August 1979, Air Pollution Abatement Survey No. 44-21-0146-79, Fort McClellan, Fort McClellan, Alabama, 24-27 April 1979.

35. Carter, R., 71st Annual Air Pollution Control Association Meetings Proceedings, June 1978, "Emissions from the Open Burning or Detonation of Explosives".

36. Circular 1390.2, Department of Housing and Urban Development, August 1971.

37. Final Rule, Republication of the Lists of Endangered and Treatment Species, 45 Federal Register 33768, 20 May 1980.

38. Final Rule, National Register of Historic Places, Annual Listing of Historic Properties, 46 10622, 3 February 1981.

39. Final Rule, National Register of Historic Places, Annual Listing of Historic Properties, 45 FR 17446, 18 March 1980.

40. Final Rule, National Register of Historic Places, Annual Listing of Historic Properties, 44 FR 7416, 6 February 1979.

41. National Historic Preservation Act of 1966, 80 Stat. 915, 16 USC 470 et seq.

42. Title 40, CFR, 1980 ed., Part 1501, NEPA and Agency Planning.

43. Final Rules, Environmental Quality; Environmental Effects of Army Actions (AR 200-2), 45 FR 69215, 20 October 1980.

44. National Environmental Policy Act, Public Law 91-190, 1 January 1970.

THIS PAGE INTENTIONALLY LEFT BLANK


FILMED
8